

PAPER DETAILS

TITLE: Misdiagnosis and Treatment In Thorasic Outlet Syndrome: A Case Report

AUTHORS: A ULUSOY,Z ÜNLÜ,F AKKOÇ

PAGES: 72-76

ORIGINAL PDF URL: <https://dergipark.org.tr/tr/download/article-file/2063765>



ODÜ Tıp Dergisi / ODU Journal of Medicine
http://otd.odu.edu.tr

Olgu Sunumu

Odu Tıp Derg
(2016) 3: 72-76

Case Report

Odu J Med
(2016) 3: 72-76

Misdiagnosis and Treatment In Thoracic Outlet Syndrome: A Case Report

Torasik Çıkış Sendromunda Yanlış Tanı ve Tedavi: Olgu Sunumu

Ünlü Z¹, Ulusoy A¹, Akkoç F¹

¹ Celal Bayar University School of Medicine, Department of Physical Medicine and Rehabilitation
Manisa Turkey

Yazının geliş tarihi / Received: 21/04/2014

Düzeltilme / Revised: 12/04/2015

Kabul tarihi / Accepted: 20/04/2015

Abstract

Thoracic outlet syndrome (TOS) is characterized by different neurovascular signs and symptoms that may occur due to compression of the brachial plexus and subclavian vessels in the thoracic outlet region. In this case we reported a female patient with bilateral TOS due to cervical ribs that misdiagnosed as a cubital tunnel syndrome and CTS (carpal tunnel syndrome) treated surgically twice time. The importance of the accurate diagnosis of ulnar paresthesia was emphasized. Detailed physical examination and radiological imaging is necessary and important for the accurate diagnosis of TOS in patients with paresthesia in the arms.

Keywords: TOS, cervical rib, misdiagnosis

Özet

Torasik çıkış sendromu(TOS), klavikula altındaki damarsal yapıların ve brakial pleksusun torasik çıkış bölgesinde sıkışmasına bağlı ortaya çıkan farklı nörovasküler semptom ve belirtilerle karakterize bir durumdur. Bizde bilateral servikal kostaya bağlı bilateral torasik outlet sendromu olup kubital tünel sendromu ve karpal tünel sendromu yanlış tanısı almış ve buna bağlı olarak iki kez opere edilmiş bir bayan hasta sunduk. Ulnar parestezinin ayırıcı tanısının önemi vurgulandı. Kollarda parestezisi olan hastalarda detaylı fizik muayene ve görüntüleme TOS ayırıcı tanısında gerekli ve önemlidir.

Anahtar Kelimeler: TOS, servikal kosta, yanlış tanı

Introduction

Thoracic outlet syndrome (TOS) is characterized by different neurovascular signs and symptoms that may occur due to compression of the brachial plexus and subclavian vessels in the thoracic outlet region (1). Etiologies may include bony (cervical rib) or soft tissue abnormalities like fibrous bands and scalen muscle hypertrophy(2). The symptoms of the TOS might be confused with many different pathologies regarding to cervicothoracic junction. Radiological imaging techniques and electrophysiologic studies and electroneuromyography (ENMG) findings should be detected carefully in differential diagnosis of TOS. We reported a female patient with bilateral TOS due to cervical ribs that misdiagnosed as a cubital tunnel syndrome and CTS (carpal tunnel syndrome) treated surgically twice time. The importance of the accurate diagnosis of ulnar paresthesia was emphasized.

Case Description

A 29 years-old female anesthesia technician complained with ulnar paresthesia in the arms bilaterally, especially on the right side, for two years. The patient was operated two times (2 and 1 years ago) in the orthopedic clinic for cubital tunnel syndrome and once time for carpal tunnel syndrome (one year before). Complaints that including bilateral severe arm pain and paresthesia increased after the surgery. Preoperatively and postoperatively ENMG studies in the arms were found normal ranges. A physical therapy program (hot pack, TENS, traction, ultrasound) to the neck was applied after the last surgery for fifteen days. The patient reported using pregabalin 300 mg per a day and symptoms were relieving a bit. The radial artery pulse became weak and symptoms aggravated during the hyperabduction test on the right side in the physical examination. Ross stress test was also positive in both of the arms. But thenar or hypothenar atrophy was not observed.



Figure 1: X-ray of the cervical vertebra shows bilateral cervical ribs

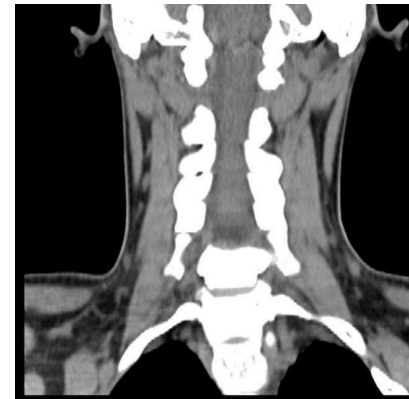


Figure 2: CT of the cervical vertebra shows bilateral cervical ribs

There were no neurological deficits such as tendon reflexes, muscle strength, sensory disturbance in the arms. We did not detect changes related with vascular insufficiency in upper limbs. X-ray of the cervical vertebra showed bilateral cervical ribs (Figure 1). Magnetic resonance imaging (MRI) and computerized tomography (CT) showed bilateral cervical ribs (Figure 2). Subclavian Color Doppler ultrasound findings showed normal flow pattern in neutral position but the flow pattern became

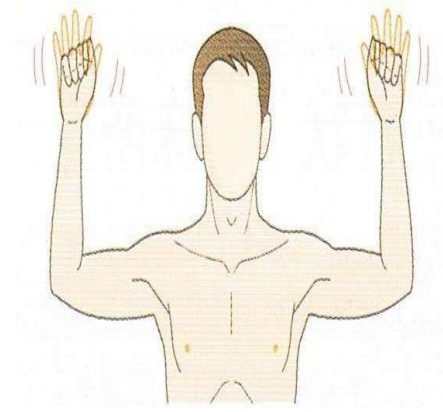


Figure 3: Ross test

monophasic and arterial flow decreased bilaterally while the arms were hiperabducted position.

Pregabalin dosage was changed to 300 mg twice a day (total 600 mg) and added duloxetine 60 mg per a day. Drugs relieved the paresthesia and pain minimally. Also physical therapy (ultrasound, TENS, traction and hot pack) and exercises for neck and shoulders have been performed for 15 seances. She did not describe any benefits after the physical therapy.

The patient was consulted to the cardiovascular surgery department in our hospital. Cardiovascular surgeons were suggested resection of the cervical ribs and referred the patient to another experienced center.

Discussion

A 29 years-old female anesthesia technician complained with ulnar paresthesia in the arms bilaterally, especially on the right side, for two years. The patient was operated two times (2 and 1 years ago) in the orthopedic clinic for cubital tunnel syndrome and once time for carpal tunnel syndrome (one year before). Complaints that including bilateral severe arm pain and paresthesia increased after the surgery. Preoperatively and postoperatively ENMG studies in the arms were found normal ranges. A physical therapy program (hot pack, TENS, traction, ultrasound) to the neck was applied after the last surgery for fifteen days. The patient reported using pregabalin 300 mg per a day and symptoms were relieving a bit. The radial

artery pulse became weak and symp aggravated during the hyperabduction test on right side in the physical examination. Ross s test was also positive in both of the arms (Figure 3). But thenar or hypothenar atrophy was not observed. There were no neurological deficits such as deep tendon reflexes, muscle strength, sensory disturbance in the arms. We did not detect any changes related with vascular insufficiency in the upper limbs. X-ray of the cervical vertebra showed bilateral cervical ribs. Magnetic resonance imaging (MRI) and computerized tomography showed bilateral cervical ribs. Subclavian Colour Doppler ultrasound findings showed normal flow pattern in neutral position but the flow pattern became monophasic and arterial flow decreased bilaterally while the arms were hiperabducted position.

Pregabalin dosage was changed to 300 mg twice a day (total 600 mg) and added duloxetine 60 mg per a day. Drugs relieved the paresthesia and pain minimally. Also physical therapy (ultrasound, TENS, traction and hot pack) and exercises for neck and shoulders have been performed for 15 seances. She did not describe any benefits after the physical therapy.

The patient was consulted to the cardiovascular surgery department in our hospital. Cardiovascular surgeons were suggested resection of the cervical ribs and referred the patient to another experienced center.

For the diagnosis of the vascular form of TOS, Doppler ultrasonography and angiography in neutral and hyperabduction are useful in comparison to other imaging methods (1). Our patient showed abnormal Doppler findings in this position but she did not define any vascular symptom. Nerve conduction studies and ENMG are pathologic only in true neurogenic form of TOS which is the most rare type. There was no neurogenic involvement in the patient.

There are some clinical pathologies that might be considered in differential diagnosis of TOS (Table 1) (7). Neto et al (1) described a case with neurogenic and vascular TOS who misdiagnosed as Takayasu Arteritis(1). Our case was misdiagnosed as cubital tunnel and KTS. She was operated for these pathologies for several times and complaints were become worse and more complicated. Clinicians must be awake for the presence of double crush syndrome that means the presence of a more proximal lesion does seem to render the more distal nerve trunk more vulnerable to compression(8). There was no findings suggesting to double crush.

The treatment options of TOS are conservative therapy and surgery. Conservative therapy includes

pharmacotherapy physiotherapy directed postural adjustments to alleviate strain on brachial plexus. C.-n.C Lo et al (9) reported clinicians should consider exercises as a major of conservative treatments, especially strengthening levator scapulae ,scalene,lower part of the trap and minor pectoralis muscles and strengthening sternocleidomastoid, upper trapezius , levator scapula and serratus anterior muscles (9). applied treatment options like these.

Conclusions

Detailed physical examination and radiologic imaging is necessary and important for the accurate diagnosis of TOS in patients with paresthesia in arms. Otherwise unnecessary surgery like patient makes the symptoms more complicated and severe. We consider that our case report is special because there is not any case in literature like this. Informed consent was taken from patient.

Table 1. Differential diagnosis of thoracic outlet syndrome

- Cervical disc pathologies
- Pancoast tumors
- Nerve sheath tumor
- Ulnar and median nerve entrapment
- Brachial plexitis, syringomyelia
- Fibromyalgia
- Spinal cord tumor
- Shoulder's disease
- Multiple sclerosis
- Raynaud phenomenon
- Acute coronary artery disease
- Vasculitis
- Complex regional pain syndrome

References

1. Dos Reis Neto, Pucinelli MI, Silva De Souza AW, Sato EI. Thoracic outlet syndrome (tos) mimicking takayasu's arteritis: case report. Acta reumatol port 2009;34(1):96-101
2. Nguyen T, Baungartner F, Nelems B. Bilateral rudimentary first ribs as a cause of thoracic outlet syndrome. J natl med assoc 1997;89(1): 69-73
3. Foley JM, Finlayson H, Travlos A. A review of the thoracic outlet syndrome and the possible role of botulinum toxin in the treatment of this syndrome. Toxins (basel). Nov 2010;4(11): 1223–1235.
4. Hooper TL, Denton J, McGillard MK, Brismee JM, Sizemore J. Thoracic outlet syndrome a controversial condition.Part 1: anatomy, and examination/diagnosis. J man manip ther. 2010;18(2):72-81

5. Samarasam I, Sadhu D, Agarwal S, Nayak S. Surgical management of thoracic outlet syndrome: a 10-year experience. *Anz journal of surgery* 2004;74(6):450-54
6. Plewa MC, Delinger M. The false-positive rate of thoracic outlet syndrome shoulder maneuvers in healthy subjects. *Acad emerg med*. 1998;5(4):337-42
7. Özgönenel I, Aslan H. True neurogenic thoracic outlet syndrome: a rare case report. *İstanbul med j* 2011;12(1):41-44
8. Österman al. The double crush syndrome. *Orthop clin north am*. 1988;19(1):147-55.
9. Christopher CL, Bukry SA, Alsuleman S. Systematic review: the effectiveness of physical treatments on thoracic outlet syndrome in reducing clinical symptoms. *Hong kong physiotherapy journal* 2011;29(2):53-63
10. Benjamin M Sucher, DO. Physical Medicine and Rehabilitation for Thoracic Outlet Syndrome. www.emedicine.medscape.com
11. Walter R. Frontera MD PhD, Julie K. Silver MD, Thomas Rizzo Jr. MD. *Essentials of Physical Medicine and Rehabilitation*, 2nd edition 2008